

Tools for teaching Evidence-Based Practice

Workgroup 3 - 4th EBHC conference

Taormina, November 2007

Contents

1	Capturing questions	2
1.1	Log Books: Paper or E	2
1.2	Whiteboards	2
1.3	Morning Reports, Grand rounds & Bedside teaching	2
1.4	Journal Clubs	2
1.5	Educational prescriptions (Cases Based Questions)	2
1.6	Unraffling – Looking for the purpose behind the Guidelines	2
1.7	News Articles	3
1.8	Audit of Clinical Sessions	3
1.9	Question Boards – Coffee Rooms	3
2	Getting Evidence	3
2.1	Medically Prepared Librarians	3
2.2	Web resources	3
2.3	Guided Practice – Mentoring or Coaching	3
2.4	Comparing Resources Findings & Speed	4
2.5	PICO Interface	4
2.6	Methodology Filters	4
3	Appraising evidence	4
3.1	The Structure of Research articles.	4
3.2	The structure of research questions	4
3.3	Checklists	4
3.4	Reporting Standards Checklists	5
3.5	Analysis of results	5
4	All the steps (Applying the evidence)	5
4.1	CASP CD teaching tool.	5
4.2	Electronic Peer Marking	5

4.3	Structured overhead student presentations	6
4.4	Challenging Conventional Teaching	6
4.5	Anonymous answers	6
4.6	Feedback	6
5	Evaluation	6

1 Capturing questions

1.1 Log Books: Paper or E

These can be useful to record the clinical questions and answers you may encounter. This will avoid forgetting them before you have actually formulated a PICO and looked for the available evidence. These logbooks can be kept as paper or electronic versions.

1.2 Whiteboards

During morning reports or any other patient discussion moments, clinical questions can be formulated as PICO and collected on a whiteboard located at a central point. Then, for example, trainees, residents, or staff members are charged to pick one of these PICOs to find relevant evidence to present a CAT at the next regular (research) meetings.

1.3 Morning Reports, Grand rounds & Bedside teaching

Morning reports, Grand Rounds, Bedside teachings, Journal Clubs These are moments where clinical cases can be presented from which clinical questions can be derived. The presence of an EBM team member is advocated.

1.4 Journal Clubs

They can be based on clinical cases as well on recent evidence particularly relevant for practice

1.5 Educational prescriptions (Cases Based Questions)

This is a summary of a 3-part clinical question, formulated on a piece of paper that is handed out to the student. A carbon copy of it is kept by the staff member to remind him or her of the task the student has to fulfill before a set date.

1.6 Unruffling – Looking for the purpose behind the Guidelines

Apart from taking the patient as starting point for a clinical question, one could also use existing guidelines to unruffle the purpose behind them by checking its validity and/or applicability by means of the AGREE instrument (www.agree-document.org).

1.7 News Articles

Recently published articles or news in the media may be used as ‘hot’ sources for questions.

1.8 Audit of Clinical Sessions

After clinical sessions patients can be reviewed with another person to discuss clinical decisions made and find possible topics for questions.

1.9 Question Boards – Coffee Rooms

2 Getting Evidence

2.1 Medically Prepared Librarians

2.2 Web resources

1. List of URLs

- [http://www.cebm.utoronto.ca/EBM Resources - Websites.htm](http://www.cebm.utoronto.ca/EBM%20Resources%20-%20Websites.htm)
- GIMBE www.gimbe.org

2. Specific sites and search engines

- ACP Journal Club www.acpjc.org
- Bandoler www.ja2.ox.ac.uk/bandolier
- Clinical Evidence, www.clinicalevidence.com
- Cochrane Library [www.3.interscience.wiley.com](http://www3.interscience.wiley.com)
- DARE www.crd.york.ac.uk
- DynaMed www.dynamicmedical.com
- e-Medicine www.emedicine.com
- OVID www.ovid.com
- Evidence Matters www.evidencematters.com
- MDConsult www.mdconsult.com
- Google scholar scholar.google.com
- PIER pier.acponline.org
- PubMed www.pubmed.org
- SUMsearch sumsearch.uthscsa.edu
- TRIP www.tripdatabase.com
- UpToDate www.uptodate.com

2.3 Guided Practice – Mentoring or Coaching

Once one gets the question(s) the trainer helps to find evidence following the necessary steps

2.4 Comparing Resources Findings & Speed

Compare yield and time of the same search made on different search engines (Pubmed, Trip etc)

2.5 PICO Interface

Evidents (for dental medical professions)

2.6 Methodology Filters

PubMed Clinical Queries

3 Appraising evidence

3.1 The Structure of Research articles.

Before teaching students about critical appraisal, they made need to understand the "anatomy, physiology, and pathology" of journal articles. The anatomy of most research articles is the IMRD format of: Introduction, Methods, Results, and Discussion.

3.2 The structure of research questions

As with formulating questions, it is helpful for students to learn to identify the "PICO" question of a research paper, before beginning the appraisal process. This provides an orientation, and often eases the appraisal process. Students should be taught not to read from the beginning of the paper, but to look for the PICO elements directly (and to mark these up on the paper).

3.3 Checklists

Checklists are a helpful aid to teaching critical appraisal. Often we start with a more detailed checklist and then use a more streamlined version of the checklist for practice. There are many checklists available, with similar items though with different wording and organisation. Some examples of common checklists are:

- JAMA Users Guides - are the most widely known, based on a series in JAMA in the 1990's. They also have a handy card version in the back of the book and are available at
- The Generalised Appraisal Tools for Epidemiology (GATE) - are simplifications of the critical appraisal process that use similar questions to the User guides but restructure them into a common simple format across all the question types. These use mnemonics PICO and RAMbo - to help remember the appraisal process – Different versions of the appraisal sheets are available at: EPiQ - www.health.auckland.ac.nz/population-health/epidemiology-biostats/epiq/ CEBM - www.cebm.net

- The Critical Appraisal Skills Program (CASP) appraisal sheets were developed in the 1990s: <http://www.phru.nhs.uk/casp/casp.htm>

For group appraisal, there are larger flip chart versions of some of these critical appraisal sheets (www.cebm.net)

Some of these checklists also have electronic version, e.g, CATMAKER will guide users through the appraisal process and produce a summary critically appraised topic.

3.4 Reporting Standards Checklists

Students may also be made aware of the checklists for authors preparing papers such as CONSORT (randomised trials), STARD (diagnostic tests), QUOROM (systematic reviews). www.consort-statement.org

3.5 Analysis of results

For the analysis of results there are several useful tools. First, many of the paper appraisal sheets have a guide for working through the 2x2 to do calculations such as RRR, ARR, and NNT. Programs available for the PDAs include Medcalc, Medrules and calculators included in the Epocrates drug database. Second, there are several online calculators. These will also do the more arduous task of calculating the Confidence Intervals. For example:

- CATMAKER - free download from the CEBM website
- Online Calculators at CEBM (oxford and Toronto)

There are several sources of short explanations of the statistical elements of the results, e.g, Series of Statistics Notes in the EBM Journal: <http://ebm.bmjournals.com/> The SWOTs corner in Bandolier

4 All the steps (Applying the evidence)

4.1 CASP CD teaching tool.

This is a CD that you can buy online, it explains:

1. Process and teaching tools
2. Questions

4.2 Electronic Peer Marking

Some web-based systems for Learning Management support peer evaluation of performance.

4.3 Structured overhead student presentations

4.4 Challenging Conventional Teaching

e.g. Chloramphenicol eye drops, Aspirin and Reye's syndrome

4.5 Anonymous answers

1. Single questions
2. multiple choice questions
3. true/false questions
4. Scratch cards

4.6 Feedback

- What was the most important thing from yesterday's session
- Group feedback after assignments

5 Evaluation

Done by another workgroup